

Case Report: Surgical Intervention of Velvet Antler Fracture in a Captive Sambar Deer (*Rusa unicolor*)

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Abstract

Antlers are a pair of large and complex horn like appendages present in male deer species and one of the distinct characteristics of the family Cervidae. Antlers grow from pedicels which are bony supporting structures that develop in the lateral region of frontal bones. Growing antlers are covered by a special type of skin (velvet), which is highly vascularised and innervated by sensory nerve fibres.

Prior to maturation, because of their rich sensory nerve supply, growing antlers (velvet antlers) are very sensitive, thus vulnerable to injury leading to instant surgical management (Senthilkumar *et al* 2011). These are very common in confined areas like zoos, rescue centres but hardly seen in free-range. The present case is about the surgical management of traumatic injury-fracture of left velvet antler in a Sambar deer aged about 4 years, body weight around 100 kg. kept at Kholta Eco-Tourism Park, Cooch-Behar, West Bengal.

Case History

Before any animal transportation from one place to another, complete health screening protocol has to be done that includes detailed blood profiling of the species. It is assumed that, seeing the staff entering the Sambar deer enclosure at Kholta Park for clinical examination and necessary blood sampling, the alarmed animals tried to escape from a frightening situation the Sambar deer in velvet antler stage might have broken its antler while dashing the chain linked fence in a process of accidentally wounding itself. General observation it revealed that the animal was apparently healthy and the left velvet antler was broken, hanging just by a small portion of the lacerated outer velvet part, causing profuse haemorrhage which needed immediate attention.

Clinical Examination

For carrying out immediate veterinary intervention the animal was first separated from the stock to a smaller enclosure. Then with physical restraining the animal was captured by nylon net with manpower taking all necessary precautions. It was blindfold and on close examination it was found that the fractured velvet antler could not be repaired and was decided to remove the fractured part of the injured antler.

Surgical procedure

Cornual nerve was blocked using 3 ml of local anaesthetic 2% Lignocaine hydrochloride. The injured lacerated outer velvet part was gently

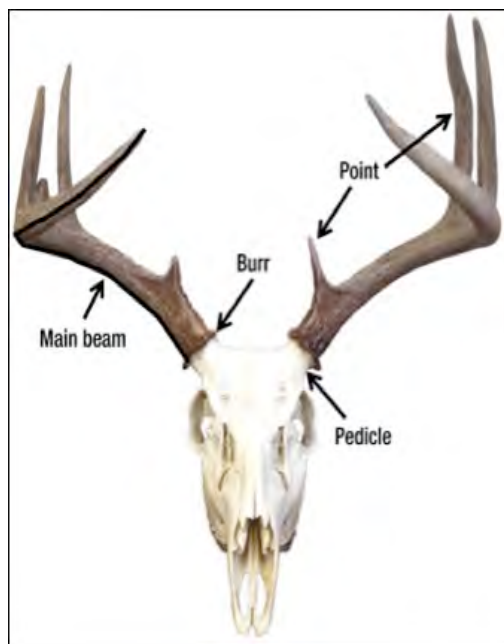


Fig 1. Antler markings with skull



Fig 2. Sambar Deer with broken velvet antler

separated by using a surgical blade leaving adequate flap for proper closure. Major arterial supply was identified and ligated at 1cm apart in two places along its course with chromic catgut no.1. Devitalized tissue was severed with surgical blade as required. Area was fully lavaged with normal saline

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Fig 3. The broken velvet antler (close view after restraint)

and metronidazole to remove any possible contamination before closure. The remaining portion of antler core was mopped repeatedly with surgical gauze to check for major bleeding vessels, if any. The portion was covered with remaining outer skin flaps by using coated Vicryl No.2 using continuous



Fig 4. The broken velvet antler (different view)

suture in double rows.

Then sterile gauge soaked in povidine iodine sprinkled with Neosporin powder was bandaged around the site. The whole procedure took around 20-25 minutes. Temperature was normal while

respiratory rate were slightly elevated (maybe as a consequence of physical restrain).

The medicines used during surgical procedure were:

1. Inj. Intacef Tazo (562.5mg, Intas pharmaceuticals contains Ceftriaxone 500mg & Tazobactam 62.50mg) – 2 vials intramuscularly.
2. Inj. Melonex (Intas pharmaceuticals, each ml contains Meloxicam BP 5 mg) – 4 ml intramuscularly.
3. Inj. Dexona-vet (Zydus Animal Health Ltd., each ml contains Dexamethasone Sodium Phosphate-4.4mg) – 3 ml intramuscularly.
4. Inj. Conciplex (Concept Pharmaceuticals Ltd., High Potency Vitamin B-Complex) – 5 ml intramuscularly.
5. Inj. Tetanus Vaccine (Each dose of 0.5ml contains



Fig 5. Surgery in progress

Tetanus Toxoid $\geq 5\text{Lf}$ ($\geq 40\text{IU}$)) - 0.5ml intramuscularly.

Post operative management was done with the following medicines orally given in feed. The animal was kept in the smaller enclosure for better care and medication.



Fig 6. Bandaging after surgery of the broken velvet antler



Fig 7. Permanent antler growth seen

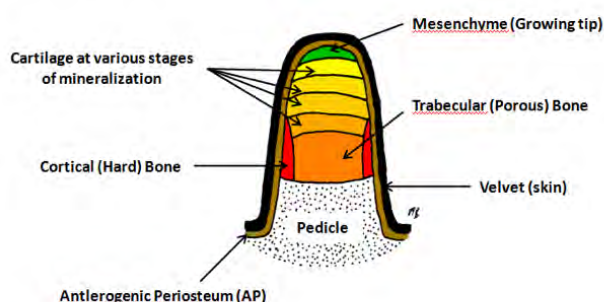


Fig 8. Antler growth description

1. Bolus Lixen- ½ bol. bid orally x 7days.
2. Bolus Melonex- 1 bol. bid orally x 3 days.
3. Bolus Serrakind- 1 bol. od orally x 7days
4. Bolus Ecotas-1 bol. od orally x 10days
5. Syr. Ambiplex- 3 tsf od orally x 10days

On the 8th day of the post surgery the gauze bandage was removed.

1. Daily topical application of ointment Himax over surgical wound was carried out till healing (when possible).
2. Powder Minfa Gold- 10gms od orally X one month.

The wound completely healed up and new permanent antler was seen arising with only its length being shorter and little twisting with some amount of malformation.

Discussion

1. Growing (velvet) antlers are very sensitive structures which are highly vascularized and have rich sensory nerve supply, so animals in this stage should never be handled as far as possible.

2. The deer antler cycle is coincidental to the reproductive cycle. Testosterone and estradiol are particularly important in the formation and mineralization of antler bones (Bubenik, 2006). Thus, handling of deer species during antler cycle should be avoided.

3. Concluded that fracture of the velvet antler in this case occurred totally due to accidental wounding in a frightened animal.

4. Chemical restraining was difficult in a herd and could possess a fatal effect so physical restraining was successful in this case in a restless animal where intervention was required for a short while with minimal risk factors in such an emergent situation.

Acknowledgements

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